

6/TI,PN,AB/1

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Pattern formation for photosensitive compsn. sensitive to radiation - comprising applying photosensitive compsn. on substrate, applying pattern exposure to compsn., and removing un-exposed portion.

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
JP 8222508	A	19960830	JP 9526994	A	19950215	H01L-021/027	199645 B

Abstract (Basic): JP 8222508 A

The pattern formation for a photosensitive compsn. contains: (a) applying a photosensitive compsn. increasing mol. wt. by exposure or evolving a crosslinking reaction on a substrate; (b) applying pattern exposure to the photosensitive compsn.; (c) removing the un-exposed portion, using a supercritical fluid.

USE - The method forms the pattern on the photosensitive compsn. having sensitivity to radiation, including near ultraviolet rays, far ultraviolet rays, excimer laser light, electronic beams, X-ray, and ion beams, and is used in a photoresist for fine processing having no notching due to swelling, no scum generated from a side reaction due to an alkali.

ADVANTAGE - The method forms the pattern having no swelling, no side reaction, yet allowing batch processing. No waste soln. due to development is evolved.

Dwg.0/0

6/TI,PN,AB/2

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Method of making photoresist compsn. with reduced solvent waste - comprising fractionation of polymeric binder resin(s) with supercritical fluid, and admixture of resin(s) with photoresist cpd(s).

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 727711	A2	19960821	EP 96300988	A	19960213	G03F-007/004	199638 B
JP 8248633	A	19960927	JP 9628793	A	19960216	G03F-007/032	199649
EP 727711	A3	19970409	EP 96300988	A	19960213	G03F-007/004	199728

Abstract (Basic): EP 727711 A

A method of making a photoresist compsn. comprises:

(a) fractionating polymeric binder resin(s) with a supercritical fluid; and

(b) admixing or reacting the fractionated polymeric binder resin with photoresist cpd(s). (P).

Cpd. (P) comprises:

(i) a photo [sic: photoactive] cpd.; and/or

(ii) photo acid generator(s).

USE - Compsns. are esp. used in positive-working photoresist for processing of Si wafer or GaAs wafer to form semiconductor devices.

ADVANTAGE - Prodn. of solvent waste is reduced or eliminated. Photo

acid generators (PAG) increase dissolution rate of photoresist films to make positive-tone photoimage. Pref. supercritical fluid (SCF) is CO2 which is safe, non-toxic, inexpensive and readily commercially available.
Dwg.0/0

6/TI,PN,AB/3
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Forming photoresist pattern on semiconductor device wafer - by immersing patterned region in supercritical flow fluid NoAbstract Dwg 1/5
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
JP 1220828	A	19890904	JP 8847196	A	19880229		198941 B
US 4944837	A	19900731	US 89317202	A	19890228		199033

Abstract (Basic): US 4944837 A

Patterned resist film is formed by: depositing a resist film on a substrate; pre-processing the film to form a latent image of the pattern; and developing the film in a supercritical atmos. to remove the pre-processed portions and form the patterned film.

The supercritical atmos. is pref., a cooled liquefied gas, in a pressure chamber.

USE/ADVANTAGE - In mfr. of a reticle or mask, compact disc, EL. Method is quick and simple and requires no washing or rinsing steps etc.. (First major country equivalent to J01220828-A) (11pp Dwg.No.1/6)

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